TOWARD A THEORY OF GP ENTREPRENEURSHIP

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A B S T R A C T

This dissertation attempts to apply Casson's theory of the entrepreneur to the behaviour of general practitioners in the UK National Health Service, since the introduction of the reforms announced in January 1989. It is argued that Casson's theory is relevant in this context because, in essence, it is concerned with a class of actors capable of enhancing efficiency: arguably, the primary objective of the NHS reforms. To facilitate the application of Casson's theory to the behaviour of general practitioners, a branch of social-anthropology called `role-theory', a Margolis type `split preference system' and what is termed a `Macaronic' utility function are employed. With these as an underpinning, a model of the `fundholding entrepreneur' is specified and discussed. The conclusion is reached that although the model developed needs refinement, the preliminary insights it generates form a useful underpinning for further research.

A B B R E V I A T I O N S

DHA	District Health Authority
FE	Fundholding Entrepreneur
FHSA	Family Health Service Authority
GPWP	General Practice White Paper
GP	General Practitioner
NHS	National Health Service
PBS	Practice Budget Scheme
RHA	Regional Health Authority
WfPs	Working for Patients

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TOWARD A THEORY OF GP ENTREPRENEURSHIP

1. INTRODUCTION

In accordance with the issued guidelines, the purpose of this dissertation is to apply `an approach which has been successful in one field to some other field to see what preliminary insights it generates and thus establishing a *prima facie* case as to whether it would be worthwhile pursuing such a line of enquiry more determinedly or not' (Dept. of Economics and Related Studies, 1992, p.12, paragraph c). This dissertation examines whether Casson's theory of the entrepreneur (Casson, 1982), successful in the field of entrepreneurial theory, may be applied to the behaviour of general practitioners in the NHS. To aid the development and discussion of a model of the `fundholding entrepreneur', the dissertation is structured as follows.

In part 2 the content of the white papers `Working for Patients' and `General Practice in the NHS: A New Contract' is outlined. It is argued that the reforms the white papers announced created a new `institutional framework' within the NHS, and that the introduction of the `practice budget scheme' enables general practitioners to meet the reform's objectives of improved quality, greater choice and enhanced efficiency.

In part 3 it is argued that Casson's theory of the entrepreneur is apt in this context, since it attempts to identify a shared element in the various economic theories of the entrepreneur, and it places emphasis upon scarce resources, which are of much concern within the globally cash-limited NHS. It is also argued that GPs who hold their own practice budgets, under the auspices of the practice budget scheme, may be classified as entrepreneurs, since they meet the criteria to be specified as such under Casson's definition.

In part 4 the conceptual framework used in a branch of social-anthropology called `role-theory' is employed to help discuss how general practitioners derive utility, and to discover what general practitioners attempt to maximise, as a means of maximising utility. The approach developed using this

framework is similar to an approach developed by Margolis (1982): general practitioners are assumed to have a `split preference system' in which they derive utility both from the `sub-role' of agent and from the `sub-role' of independent contractor.

In part 5 the objective function of a fundholding GP is specified, and the argument made that their concern with efficiency makes them entrepreneurs. Furthermore, various notions of efficiency (within health economics) are outlined, and the threads of the dissertation drawn together in the final section by discussing how fundholding entrepreneurs attempt to maximise utility.

In part 6 the success of applying Casson's theory of the entrepreneur to the behaviour of general practitioner is discussed. The conclusion is drawn that although the model of a fundholding entrepreneur needs refinement, the preliminary insights it generates form a useful underpinning to further (questionnaire-based) research planned by the supervisors of this dissertation.

2. REFORM OF THE NHS

Working for Patients

The reforms introduced by the white paper `Working for Patients' (DoH, 1989b) represent the most fundamental change to the delivery of health care that the United Kingdom has seen since the inception of the National Health Service (NHS). The reforms introduced by Working for Patients (WfPs) were designed to (DoH, 1989b, pp.3-4):

> **give patients, wherever they live in the UK, better health care and greater choice of the services available.**

Therefore, the objectives of the reforms (whilst acknowledging the existing NHS policy aim of spatial equity) are improved quality of service and greater patient choice (Posnett, 1993, p.2). The White Paper announced that these objectives would be achieved by the implementation of three main measures:

> **(1) the introduction of `quasi-markets',**
> **(2) the introduction of self-governing NHS hospital trusts,**
> **(3) the introduction of budgets for general practitioners.**

With the introduction of quasi-markets, responsibility for purchasing and providing health care was separated: purchasers now articulate the need for health care, whilst providers respond by supplying the services specified as needed in a broadly competitive framework (Culyer, 1991a, p.1255). In this environment, district health authorities (DHAs) became the main purchasers of services from a range of public, private and voluntary providers, including hospitals that opt-out of DHA control to become self-governing NHS trusts (Ham, 1993, pp.49-50).

The introduction of budgets for general practitioners (GPs), under the auspices of practice budget scheme, also made it possible for large GP practices to become purchasers in NHS quasi-markets[1]. Those GPs accepted by the relevant regional health authority (RHA) to hold their own budgets are allocated a budget to cover the purchase of a defined range of hospital and diagnostic services for the patients on their lists.

The Government believed that the introduction of quasi-markets would not only generate improvements in quality of service and greater choice, but that quasi-markets would also enhance efficiency in the NHS (Posnett, 1993, p.2). These efficiency gains would be generated by a reduction in X-inefficiency, increased exploitation of economies of scale and use of spare capacity at marginal cost (Akehurst et al., 1988, p.15). In order to ensure that NHS quasi-markets do not result in market outcomes that conflict with either the egalitarian foundations of the NHS or existing NHS policy objectives, and to ensure that efficiency gains are not achieved at a cost to patient care, WfPs introduced the following measures (DoH, 1989b, pp. 4-5):

(1) delegation of as much power and responsibility as possible to local level,

(2) reform of NHS management,

(3) introduction of medical audit.

These measures also attempt to address the problems of medical practice variation and deficiencies in clinical data by giving more power to the personnel directly involved in purchasing and clinical decision-making, whilst tightening the operation and control of NHS provider units.

The General Practice White Paper

In the same year that WfPs was published, the Department of Health also published `General Practice in

[1] Initially, when the reforms were implemented in April 1991, a GP practice needed 11,000 patients on its list to be eligible for fundholding status, but this was reduced to 9,000 in April 1992, and then 7,000 in April 1993.

the National Health Service: A New Contract' (DoH, 1989a). The General Practice White Paper (GPWP) outlined the requirements of good general practice, and listed the following as the Government's plans for improving general medical services (DoH, 1989a, p.1):

(1) to give consumers better choice,

(2) to strengthen GPs' relations with FPCs to encourage good quality services,

(3) to ensure greater value for money,

(4) to make GPs' terms of service reflect the requirements of good general practice,

(5) to make GPs' remuneration more performance related.

The aim of plan (1) is to encourage GPs to offer consumers[2] a wider range of services, and the option of receiving hospital care from a larger number of providers. The essence of plan (2) is to encourage GPs to meet the requirements of good general practice outlined in the GPWP. Finally, plan (3) is analogous with the WfPs objective of enhanced efficiency, which in the context of general practice, means attempting to achieve a GP's objectives and meeting the requirements of good general practice, at least cost. The desire to encourage good general practice also underpinned the changes to the general practice `terms of service'. The changes to the terms of service require that GPs (DoH, 1989a, pp.21-26):

(1) be responsible for their patients on a 24 hour per day basis,

(2) be available for direct consultation for at least 20 hours per week,

(3) live within a reasonable distance of the surgery,

(4) provide health promotion/illness prevention services,

(5) ensure that health professional staff are properly qualified and trained,

(6) provide practice leaflets,

(7) submit to the relevant Family Practitioner Committee[3] an annual report.

[2]In this context, an individual not on a GP's list is a `consumer'; an individual on a list is a `patient'.

[3]After the reforms were introduced Family Practitioner Committees were changed to Family Health

Regardless of whether a GP hold his own practice budget or not, within this new framework, only GPs who meet the requirements specified in the terms of service will be eligible to practice; that is, responsibility (i.e., GPs responsible for patients 24 hours per day) availability (i.e., GPs must be available for consultation for 20 hours per week and live near their practice), health promotion (i.e., GPs must provide health promotion/illness prevention clinics), qualifications (i.e., practice staff must be properly qualified and trained) and information (i.e., GPs obliged to issue practice leaflets and an annual report). These requirements define `good general practice', which provides a bench-mark in relation to which the `standard of service' a GP offers may be judged. For example, it is good general practice to provide `health promotion/illness prevention clinics', but factors such as the type of clinics provided, the frequency of their provision and the content of the clinics constitute the standard of service a GP offers, in that dimension.

In order to raise consumer awareness and understanding of what constitutes good general practice, the GPWP proposed to (DoH, 1989a, p.3):

(1) make it easier to change doctors,

(2) increase the information medical lists contain about GPs,

(3) make it compulsory for GPs to issue practice leaflets,

(4) introduce consumer surveys in order to highlight where services need improving,

(5) improve information about family doctor services and how to use them.

These measures were designed to increase the information available to consumers, whilst making it necessary for GPs to compete for patients on the basis of the service they offer[4].

Service Authorities.

[4]This is based on the assumption that the geographical distribution of GPs will not create monopolies

The mechanism by which a consumer chooses a GP may partially be explained by the concept of `bounded rationality'[5]. The model of bounded rationality emphasises that individuals learn by trial-and-error, and in complex situations limit the information that they take into consideration (Friedman, 1984, p.222). Consequently, consumers limit the information they take into consideration when choosing a GP, since making a decision based on a GP's true performance is too complex. Indeed, in this scenario, consumers face the problems of `intangibility', `non-standardisation' and `inseparability of production and consumption'[6], which makes it difficult for them to judge a GP's performance *a priori*. Furthermore, consumers rely heavily on `experience-' and `credence- ', rather than `search-', qualities[7] when purchasing a service (Zeithaml, 1991, pp.40-41), which suggests that when choosing a GP, consumers rely more on beliefs than facts. In order to form such beliefs, consumers may gather information from `personal' and `non-personal' sources; however, this will involve `search-' and `observational-' costs[8], which may deter consumers from choosing any but their geographically nearest GP.

In this scenario, it is likely that consumers will rely on `signals' given and given-off by a GP regarding his ability and the standard of services he offers, and that these will be the main sources of information that

(i.e., enough GP exist in each area to create competition).

[5] i.e., human behaviour that is `intentionally rational, but only limitedly so' (Simon, 1961, p.xxvi; quoted in McGuire et al, 1992, p.50).

[6] i.e., `intangibility' is an inability to experience services in the same manner as goods can be experienced; `non-standardisation' is an inability of the producer to provide consistent performance and quality of service; `inseparability of production and consumption' in this context means that a GP's diagnosis and performance depends upon a patient's communication and participation; therefore, there must be a good doctor-patient rapport (Zeithaml, 1991, p.41).

[7] i.e., `experience qualities' are attributes which can only be discerned after purchasing a product; `credence qualities' are characteristics which the consumer may find impossible to evaluate, even after purchase and consumption; `search qualities' are attributes which a consumer can determine prior to purchasing a product (Zeithaml, 1991, p.40).

[8] i.e., `search costs' are incurred finding trading partners (in this case, a GP); `observation costs' are incurred discovering the quality of what is being exchanged (in this case, the service offered by a GP) (Gravelle and Rees, 1992, p.515).

consumers have available. For example, a consumer may base his decision to register with a particular GP on the basis of the `tangibles' he can observe; for example, the `physical facilities' that the GP offers. Therefore, GPs have an incentive to invest in tangibles that signal to consumers that they are competent; and, it is likely that consumers will respond to such signals, since they probably have little other information on which to base their beliefs about a GP's performance. The result may be a situation in which GPs compete for patients on the basis of the tangibles they offer, which may lead to non-price competition[9]

The mechanism by which consumers choose their GP is important, as the GPWP also announced that (DoH, 1989a, p.7):

> **it is considered that a GP's income should, in future, be more directly related to the number of patients the GP attracts to his or her list and to the services provided.**

The Government held the view that GPs would have a stronger incentive to offer a better service if they derive a greater proportion of their income from capitation fees[10], since GPs who do not will lose patients (and remuneration) to those that do.

The Government also changed the remuneration system so that the remaining (non-capitation) element of a GP's income, regardless of whether he is a practice budget-holder or not, is designed to come from the provision of defined services and the meeting of specified targets. To encourage GPs to achieve higher levels of cover for childhood immunisation and for screening for cancer of the cervix, target payments were introduced. Such payments are paid for achieving, or helping to achieve, within a particular practice

[9]i.e., non-price competition is when value is added to a service as a means of attracting patients, and such behaviour takes many forms: for example, in the hospital sector in America it has been reported as resulting in refurbishment of hospital wards with fashionable colour coordinated décor, video recorders, gourmet meals and valet parking (Quam, 1991, p.198).

[10]The Government intended to raise the average remuneration accounted for by capitation fees from 46 per cent to at least 60 per cent (DoH, 1989b, p.54).

population, 90 per cent cover for childhood immunisation and 80 per cent cover for cervical cytology (DoH, 1989a, p.9). New sessional fees were also introduced for GPs who provide minor surgery services[11] and health promotion clinics (DoH, 1989a, p.10-11). Therefore, the introduction of such payments, *ceteris paribus*, gives GPs the incentive to provide the defined services and meet the specified targets, since they are paid on a fee-for-item of service basis for doing so (McGuire et al, 1992, p.248).

The changes to the remuneration system were not only designed to give GPs the incentive to perform certain tasks, but they were also an attempt to reduce the cost of general practice to the NHS. For example, on the margin, *ceteris paribus*, a GP subject to capitation fees is less likely to treat a patient, since he is paid for being available to treat, rather than for treatment *per se* (McGuire et al, 1992, p.247). Therefore, not only did the GPWP provide a formal statement of the standard of service a GP must offer in order to meet the requirements of good general practice, but the White Paper also attempts to make GPs more efficient by encouraging them to enhance quality and choice, at less cost to the Department of Health.

The practice budget scheme

WfPs also made it possible for GPs to apply to hold their own budgets, under the auspices of the practice budget scheme (PBS). Those GPs accepted by the relevant RHA to hold their own practice budgets (fundholding) are allocated a budget to cover the purchase of a defined range of hospital services. These services comprise of a defined range of outpatient services, inpatient and day-case treatments and diagnostic tests. In addition to hospital services, the practice budget is divided into two further elements, which cover aspects of general practice services provided by GPs themselves: `practice staff and premises improvement costs' and `prescribing costs'. Under the PBS, fundholding GPs are given the responsibility

[11]This was classified as an optional service in the white paper, and not part of the requirements for good general practice (DoH, 1989a, p.26).

for deciding the best mix of budgeting for their practice. Such freedom allows fundholders to generate a budget surplus, which he may plough back into improving the practice, and use to offer a better standard of service to the patients on his list.

It may be argued that fundholding enables GPs to meet the requirements of good general practice outlined in the GPWP, and to provide the tangibles that may attract patients to their lists. For example, savings made in the hospital services element of the practice budget could be used to improve practice premises and to contribute towards the employment of a practice nurse. Not only could the practice nurse help provide the services defined and meet the targets specified in the GPWP, but the nurse's activities could free GP time, which the practice could use to help meet other requirements of good general practice outlined in the White Paper. Furthermore, improved tangibles and a better standard of service may attract more patients to a GP's list, which could create `economies of scale', making that GP more efficient, and possibly generating a larger budget surplus. Indeed, it was the Government's belief that by giving GPs the freedom to operate in this manner, the PBS would deliver *`better care for patients*, *shorter waiting times* and *better value for money*' (DoH, 1989b, p.48; *italics added*).

As well as giving fundholders the freedom to generate and use a budget surplus, the PBS also gives GPs a fee to cover the management, start-up and other costs of participating in the scheme. It may be argued that the allocation of this initial fee also enables fundholding GPs to meet the requirements of good practice. For example, if start-up costs include the provision of improved computer facilities, these facilities could be used to monitor childhood immunisation and cervical cytology cover rates within the practice list.

Therefore, not only does the introduction of the PBS give GPs the opportunity of changing the `property rights'[12] to which they are subject (which gives them the flexibility to exploit the new `institutional

[12]i.e., the rules (whether formal and legal or informal custom) which specify what individuals are

framework'[13] introduced by the reforms), but it also creates the possibility that fundholding GPs will be more able to realize the expected benefits of the reforms (i.e., offer a better standard of service, meet the requirements of good general practice, and secure or improve their remuneration). Furthermore, it may be argued that the new institutional framework was introduced with the intention of creating an operating environment that possesses the characteristics of a free market, and that, within this new framework, the practice budget scheme presents GPs with a much greater degree of independence and control, and confers upon them enhanced market power, which gives them the opportunity to adopt a much more entrepreneurial role in the running of their practices. Indeed, it may be argued that for the NHS reforms to realize the expected benefits mentioned above, the involvement of entrepreneurs is required. Therefore, to facilitate understanding of the role of entrepreneurs within general practice, and to help develop a model of the `fundholding entrepreneur', various theories of entrepreneurship are discussed in the following section.

allowed to do with resources and the output of these resources (Gravelle and Rees, 1992, p.10).

[13] i.e., the options the individual actors have and the outcomes they receive as a function of the actions of others (Kreps, 1990, p.3).

3. CASSON'S ENTREPRENEUR

Casson's definition of an entrepreneur

There are several models of the entrepreneur within the discipline of economics[14]. In the neoclassical school, the entrepreneur has a static and passive role, which reflects the theory's emphasis on perfect information and perfect markets. In Schumpeter's theory (1934), the entrepreneur has a decision-making role, and his main function is to innovate (i.e., introduce new goods; introduce new methods of production; open new markets; conquest new supplies; create new types of industrial organisation). Hayek (1937) and Kirzner (1973) support Schumpeter's view. However, they regard the entrepreneur as responding to change; whilst Schumpeter regards the entrepreneur as a source of change. Leibenstien (1968) regards the entrepreneur as someone who achieves success by avoiding the inefficiencies to which other people (or the organisation to which he belongs) are prone. Knight (1921) defines individuals who take decisions in highly uncertain environments, and bear the full consequences of those decisions themselves, as entrepreneurs.

Casson (1982) attempts to identify a shared element that runs through these theories of the entrepreneur by introducing the concept of entrepreneurial judgement. The attempt to identify a shared element suggests that Casson's theory has generality and may be applied to all kinds of entrepreneurship. Such generality is helpful, since (to my knowledge) a theory of the NHS entrepreneur has yet to be postulated. Furthermore, it may be argued that if the NHS reforms are to realize the expected benefits, the involvement of entrepreneurs is required, since only they can realize superior outcomes (in this case, increased quality and greater choice) with no extra resources (which was the case when the reforms were introduced). However, the feasibility of such an argument is contingent upon the definition of entrepreneur used. In

[14]The following summary of entrepreneurial theory is based upon the description given in (Casson, 1982, pp.364-83).

this context, Casson's definition is particularly illuminating. Casson (1982, p.23) defines an entrepreneur as:

> ***someone* who *specialises* in taking *judgemental decisions* about the *co-ordination* of *scarce resources*. (*italics added*).**

According to Casson an entrepreneur is ***someone***[15]. This means that the entrepreneur must be an individual, and not a group of individuals, within an organisation; as, according to Casson, only individuals can take decisions, whilst groups arrive at decisions by aggregating votes (Casson, 1982, p.23). Therefore, an entrepreneur within the NHS must be an individual.

Casson defines an entrepreneur as someone who ***specialises***. The essence of Casson's argument is that everyone at one time or another is involved in taking judgemental decisions, but this does not make them a specialist at it; individuals who specialise, on the other hand, do so because they have, or specialization gives them, a comparative advantage in taking particular types of judgemental decisions (Casson, 1982, pp.23-4). Therefore, an entrepreneur in the NHS must specialise in taking judgemental decisions.

*A **judgemental decision,*** Casson argues, is one which different individuals, sharing the same objective and acting under similar circumstances, would take differently; as each individual has a different perception of the situation, which arises from a different access to information, or from a different interpretations of it (Casson, 1982, p.24). It may be argued that, within the context of the NHS, the uncertainty surrounding both the timing and the cost of ill-health, the ignorance about the input-outcome relationship in medicine (the health production function), the high costs involved in obtaining clinical

[15] Casson argues that `*it is instructive to consider this definition as one would a text, almost word by word*' (Casson, 1982, p.23; *italics added*).

information and training and the lack of data on inputs, activity and outcomes mean that, in most situations, there is no obviously correct decision rule: with the consequence that most decisions taken will be judgemental.

Casson defines ***co-ordination*** as a beneficial re-allocation of resources. This requires that an entrepreneur be an agent of change; not merely concerned with perpetuating the existing allocation of resources, but with improving it (Casson, 1982, p.24). Therefore, an entrepreneur within the context of the NHS is someone who responds to the opportunities for change that the nature of ill-health, medical practice and the introduction of a new institutional framework present.

Finally, Casson argues that a concern with ***scarce resources*** limits the field of study to that usually identified as economic (Casson, 1982, p.24). In this case, as the concern is with scarce resources within the NHS, it may be argued that the field of study be limited to that usually identified as being within the remit of the discipline of health economics. It may be also argued that a concern with scarce resources makes entrepreneurship synonymous with efficiency[16]. Indeed, the essence of Casson's argument is that an entrepreneur sharing the same objective as an non-entrepreneur, and acting under similar circumstances, will take judgemental decisions that are more likely to realise the desired objective, whatever that desired objective is defined as being.

Therefore, it is possible to use Casson's definition to define an entrepreneur within the context of the NHS. In the context of general practice, it may be argued that GPs who hold their own budgets, under the auspices of the practice budget scheme, are entrepreneurs. This is because a
GP (i.e., an individual[17]) must apply to hold his own practice budget (i.e., decide to specialise), which

[16] This argument may be applied to all types of entrepreneur, even profit maximisers, who by being efficient will maximise the amount of the desired objective (i.e., profit) realised, with given resources.

[17] Although many fundholding practices have more than one GP, as the number of patients on the practice list must exceed 7000 to be eligible to participate in the PBS, it is assumed that one GP

requires that he take decisions about the optimal way to spend (i.e., take judgemental decisions about co-ordination) his own cash-limited practice budget (i.e., scarce resources). Furthermore, a fundholder's concern with achieving his objectives and meeting the requirements of good general practice outlined in the GPWP, with the cash-limited practice budget, means that he is concerned with efficiency. Therefore, it may be argued, in accordance with Casson's definition, that GP fundholders are entrepreneurs.

The entrepreneur's objective function

In his analysis, Casson assumes that entrepreneurs are motivated by self-interest, and that their objective is to maximize consumption and status derived utility, which they can buy using the income generated by entrepreneurial activity (Casson, 1982, p.25). To further simplify his theory, Casson also assumes that entrepreneurs are profit maximisers[18]: they operate their businesses purely with a view to maximising the profit obtained from a given amount of effort, and do not seek to increase their utility by methods that would reduce the profitability of the business. Therefore, the objective function of Casson's entrepreneur may be represented as:

Max. En = U(Co,St)

s.t. max. (Pr)

Given that,

U(Co,St) = f(Yn)

Yn = f(Pr)

in the practice acts as the entrepreneur, and guides the actions of others.

[18] Casson comments that the `*relaxation of this assumption must remain, for the moment, part of the agenda for the future development of the theory*' (Casson, 1982, p.25; *italics added*).

where,

En is the entrepreneur's utility,

Co is the entrepreneur's consumption,

St is the entrepreneur's status,

Yn is the entrepreneur's income,

Pr is the entrepreneur's profit from entrepreneurial activities.

It may be argued that Casson's assumption that entrepreneurs only derive utility from consumption and status places undue informational restrictions upon the sources of entrepreneurial utility. For example, if Casson's analysis is re-situated within the context of the NHS, it seems a reasonable intuition to expect that, to some extent, the *raison d'être* of the NHS (i.e., to provide health care) will affect how entrepreneurs working within the system derive utility. Furthermore, Casson's assumption that entrepreneurs are purely profit maximisers does not seem intuitive in the context of the NHS. Therefore, a model which posits the idea that an entrepreneur in the NHS is a profit maximiser[19], and derives utility solely from consumption and status, seems neither intuitive, nor robust. Therefore, the issue of what entrepreneurs within the NHS attempt to maximise (i.e., their objective) and how they derive utility needs to be addressed before a theory of GP entrepreneurship can be advanced.

Utility and non-utility information

To facilitate discussion about how health economists should measure utility, Culyer (1989) makes the (heuristic) distinction between what he terms as the categories describing things and their characteristics, and as categories describing people and their characteristics (Culyer, 1989, pp.9-10). On the left hand side

[19]i.e., profit in terms of remuneration an individual receives by working for the NHS.

of Figure One is what Culyer terms `the universe of things', which contains commodities (i.e., goods and services) and their characteristics (which are sometimes taken to be synonymous with quality). In what Sen calls the `welfarist' approach to (health) economics, individuals derive utility in the universe of things, as a function only of the goods and services they consume (Culyer, 1991b, p.67). In what Culyer terms the `characteristics' approach, individuals do not solely derive utility from the consumption of goods and services *per se*, but from their characteristics as well (Culyer, 1989, p.10).

RELATIONSHIP BETWEEN COMMODITIES, CHARACTERISTICS, AND UTILITIES

THE UNIVERSE OF THINGS THE UNIVERSE OF PEOPLE

COMMODITIES --------->CHARACTERISTICS ---------->CHARACTERISTICS ------> UTILITIES
HEALTH CARE --------->TIMELINESS ----------> BEING REASSURED ------> PLEASURE
CLINICAL EFFICACY ABLE TO FEED ONESELF READMISSION RATE ABLE TO EARN LIVING

FIGURE ONE. Source:(Culyer, 1989, p.11)

Sen (1979, pp.547-49) disputes the acceptability of the welfarist notion that individuals derive utility solely from the consumption of goods and services, even when utility information is as complete as it can possibly be[20]. Sen illustrates his argument with the following example, in which there are three social states (*x, y and z*), with the following utility numbers for person 1 and 2 (Sen, 1979, p.547):

	xyz
Person 1's utility	**477**
Person 2's utility	**1088**
Sum of utility	**14 15 15**

[20] i.e., when interpersonally comparable, cardinal (ratio scale) utility functions, with unique utility numbers, are permitted (Sen, 1979, p.47).

In *x* person 1 is hungry, while person 2 eats a great deal. In *y* person 2 has been made to surrender a part of his food supply to person 1. While person 2 is made worse-off, person 1 gets more utility, and the sum of utility is larger. Under welfarism, the non-utility information that coercion has occurred is an irrelevance: the sum of total utility is higher in *y* than in *x*, so *y* is socially preferred (Culyer, 1991b, p.89).

In *z* person 1 is still just as hungry as in *x*, and person 2 also eats just as much. However, person 1, who is a sadist, is now permitted to torture person 2, who is no masochist. In this situation, the utility numbers in *z* are exactly the same as in *y*. Under welfarism *y* is socially preferred to *x*, but as the utility in *z* is the same as in *y*, *z* is also socially preferred to *x*. Again, the relevance of non-utility information (i.e., the fact of torture and disapproval of it) is denied (Culyer, 1991b, p.89).

What Sen terms the `extra-welfarist' approach relaxes the undue informational restrictions of welfarism and posits the idea that non-utility information is also important when ranking social states. Culyer (1989) advocates that a particularly important class of non-utility information (within the topic of health economics) is the general notion of `characteristics of people', which is situated on the right-hand side of Figure One, within what Culyer terms the `universe of people'. Culyer's characteristics of people approach posits the idea that utility (in the welfarist sense) focuses too much on `*mental and emotional responses to commodities and characteristics of commodities, and not enough on what they enable the individual to do*' (Culyer, 1989, p.15; *italics added*). Indeed, a focus solely on commodities seems restrictive when studying utility derived from health care, as patients do not consume health care for consumption's sake, but for the effect that such consumption is expected to have on their `health' status. (i.e., health care is instrumental). Therefore, it is health, not consumption, that generates utility, and it does so in two ways: directly via a sense of well-being and indirectly in the source of welfare of which better health enables one to take advantage (Culyer, 1991b, p.70).

Another conceptual construct describing utility relevant in this context is `process utility', which in one of

its forms suggests that individuals, faced with decisions that may have a detrimental outcome, derive utility from the act of another taking such decisions. Therefore, patients may derive utility from that characteristic of the commodity health care which allows them to `off-load' responsibility for difficult decision-making on to a doctor (McGuire, 1992, p.47).

Therefore, not only is it possible for patients to derive utility from the consumption of health care goods and services, but from their characteristics and the `health' status gain they yield, as well as from a doctor's involvement in taking health care decisions. However, this leaves unsettled the issue of how the utility function of individuals (in particular, entrepreneurs) working in the NHS should be specified, and what they should be modelled as attempting to maximise, as a means of maximising this utility.

4. THE ROLE OF GENERAL PRACTITIONER

Role theory

An insight into the issue of how individuals within the NHS derive utility may be gained using the conceptual framework provided by a branch of social-anthropology called `role-theory'. The first main concept from role-theory important in this context is that of `status', which Goffman (1961, p.75) defines as:

> **a position in some system or a pattern of positions and is related to the other position in the unit through reciprocal ties, through rights and duties binding on the incumbents.**

Therefore, the position of general practitioner may be described as a status within the NHS, which binds GPs to a particular systems of funding and remuneration, management structure and property rights. A concept closely related to that of status is the concept of `role', which Goffman (1961, p.75) defines as:

> **the activity the incumbent would engage in were he to act solely in terms of the normative demands placed upon someone in his position.**

Therefore, the `overall-role' of general practitioner dictates that GPs engage in defined activities, which relate to the normative demands imposed upon that role by the status of that position. Within the overall-role of general practitioner fall several `sub-roles', each having to do with a particular kind of `role-other' (i.e., relevant audience). Since the inception of the NHS, GPs have had two main sub-roles, with particular role-others, within the NHS:

> **(1) *agent* - patient,**
>
> **(2) *independent contractor* - Department of Health.**

The sub-role of agent

Because of `bounded rationality'[21] and `informational impactedness'[22], patients usually require an agent who can inform, or take, their health care decisions; since GPs operate as `gate-keepers' to the NHS, they are the group of doctors most likely to perform this function. It may be argued that a GP's success in fulfilling the sub-role of agent has an effect on the utility individuals derive from being a patient of the NHS, which, in turn, affects the utility that GPs derive in the sub-role of agent. Therefore, before a GP's objective function may be specified, it is necessary to specify the source from which NHS patients derive utility. Within the context of general practice, a patient's objective function may be represented as:

Max. Pi = U(Hi,Ii,Li,Q)

s.t. min. (Ci)

Given that,

Hi = f(Li,Ii)

Q = f(qu,ch)

where,

Pi is patient i's utility,

Hi is the expected change in patient i's `health' status,

Ii is the quantity of health care inputs (including prescriptions) given to patient i[23],

[21]In health care situations, whether because of complexity or lack of trials for trial-and-error, patients by themselves usually make poor health care decisions.

[22]i.e., a situation in which there is major asymmetry of information between the parties to a transaction, the costs of reaching parity for the poorly informed party are very great and the parties may, if wished, behave opportunistically (McGuire et al, 1992, p.50).

[23] i.e., either provided by the practice or in the form of a service purchased from a provider, including both physical and staff inputs, including GP time spent administering health care inputs, but not GP time in consultation with a patient aiding that patient's health care decisions (i.e., acting as an

Li is GP labour input when acting as an agent for patient i

Q is the standard of service offered by the GP,

Ci is the cost to patient i of receiving health care,

qu is the quality of service offered by the practice,

ch is the choice of services offered by the practice.

In this model, patient i attempts to maximise the utility derived from the expected change in his `health' status (Hi), the health care inputs (Ii) he receives, the time his GP spends acting as his agent (Li) and the standard of service (Q) his GP offers, whilst minimising the cost to himself of receiving health care (Ci). The model assumes that the health production function is limited to the inputs of GP labour (Li) and health care (Ii), that the quality of health care inputs (Ii) are homogenous and that the only element of quality relevant is the standard of service (Q) a practice offers, which, in line with the requirements outlined in the GPWP, is defined in terms of quality (qu) and choice (ch)[24]. As well as deriving utility directly from (Q), it is also assumed that patient i takes standard of service as an indicator of his GP's competence, and accordingly (Q) weights the utility that patient i derives from (Li) and (Ii)[25].

The model of patient i's objective function has (what shall be termed here) a `macaronic'[26] utility function, in which utility appears in all its conceptual guises: extra-welfarist (Hi), welfarist (Ii) and characteristics (Q), as well as in a process utility form (Li). It could be argued that such a mix of conceptual types of

---

agent).

[24]i.e., `quality' is defined in terms of responsibility, availability, health promotion, qualifications and information, whilst `choice' is defined in terms of the range of services a practice offers and the number of provider units to which its patients can choose to be referred.

[25]In the same sense as in Culyer (1989, p.10), where the quality of a steak (juiciness, etc.) affects one's utility from consuming that steak.

[26]i.e., it intermixes modern (extra-welfarist, characteristics and process) notions of utility with genuine (welfarist) utility; in the same sense that `macaronic prose' intermixes Latin words modernised and modern words Latinized with genuine Latin words.

utility may lead to double (or multiple) counting of utility. However, if it is assumed that in some situations utility is not derived from all sources (e.g., consultation only, no treatment) or that utility is derived sequentially, and over many time periods (e.g., Period 1: consultation; Period 2: treatment; Period 3: health status improvement), then the problem of double counting will not occur. Indeed, it seems more intuitive to assume that patients derive utility from different sources, at different times, than to assume that patients only derive utility either from their `health' status or from the health care inputs they are given.

With the patient's objective function specified, a GP's objective function, in the sub-role of agent, may be represented as:

Max. G = U(ΣPi), i = 1,...,n

s.t. max. (ΣHi,ΣIi,qu,ch), i = 1,...,n

min. (ΣLi), i = 1,...,n

where,

G is the GP's utility

n is the number of patients on the GP's list

In the above model, the GP attempts to maximise the utility he derives from his patients (ΣPi), whilst attempting to minimize the amount of labour (Li) he expends on each patient[27]. In order to maximise his utility, the GP attempts to maximize both the expected change in `health' status (Hi) of, and sum of health care inputs (Ii) given to, the patients on his list[28], whilst maximising the standard of service (Q), in terms of quality (qu) and choice (ch), he offers.

[27] Not only because this maximizes his leisure, but also because the labour spent on one patient has an opportunity cost in terms of the time spent with the GP that other patients forgo.

[28] It is assumed that the GP has un-met need amongst the patients on his list, which he could meet with more resources. However, this requires making the (unrealistic) assumption of non-satiation.

As the welfare of his patients enters into his utility function, the GP has interdependent preferences[29]. Furthermore, the utility the GP derives is a type of process utility, since it is derived from the act of participating in the maintenance and improvement of the welfare of the patients on his list[30]. Indeed, it is only the utility derived from participating (and not actual patient utility) that enters into the GP's objective function; and, *ceteris paribus*, the GP maximises his utility by concentrating his time and resources on patients who are most `efficient' at converting these inputs into his own utility. For example, the GP may derive more utility from treating an infant, than realizing a large `health' status gain for a single man; although, in this hypothetical example, the latter derives more utility than the former[31]. Therefore, patient i's objective function (specified above) is only a heuristic device that specifies the possible sources of patient utility, which the GP may derive utility from creating. Finally, it is assumed that the GP only derives utility from his participation, and not from the participation of other individuals within the NHS to whom the he refers his patients. For example, if the GP refers a patient to a consultant, then the GP only derives utility from when, acting as an agent, he referred that patient to the consultant[32]; the utility the patient derives from the consultant is not included in the GP's utility function.

[29]This occurs when one person cares about some aspects of another person's well-being (Friedman, 1984, p.60).

[30]The GP only contributes to the welfare of the patients on his list, as other health care professionals in the private sector and the NHS (e.g., hospital staff, dentists, pharmacists, etc.), non-health care professionals (e.g., teachers, nursing home staff, sanitation workers, etc) and non-human inputs (e.g., `healthy' food, clean air, sporting facilities, etc.) form the majority of inputs to his patients' health production functions.

[31]In recent work by Williams a group questioned produced a consensus that `an infant' should be given more weight than other individuals at later stages in the life-cycle (Culyer, 1991b, p.94). Therefore, it is plausible that a GP may derive more utility from treating an infant, regardless of the outcome, than from treating a single man, even if that man could make a significant `health' status gain from the same attention.

[32]However, if the GP in question is a fundholder, and the patient's treatment from the consultant is paid out of the fundholder's practice budget, then the utility from this source is included in GP's utility function.

The sub-role of independent contractor

The second main general practitioner sub-role is that of independent contractor. This sub-role demands that GPs engage in defined acts in order to meet the needs of the NHS and the policy objectives of the incumbent government. With the introduction of the reforms, these needs and objectives changed; and, as a result, so too did the sub-role of independent contractor. The introduction of such measures as Indicative Prescribing Budgets, the replacement of Family Practitioner Committees with Family Health Service Authorities and the implementation of a new general practice terms of service, illustrate a determination on the part of the Government to make more stringent the normative demands that GPs have to meet.

In accordance with Casson's analysis, in the sub-role of independent contractor, it is assumed that GPs are profit (i.e., remuneration) maximisers, since this maximises their consumption and status derived utility. Therefore, the GP's utility function may be expanded to include consumption and status, and it may be represented as:

$$\textbf{Max. } G = U(\Sigma Pi, Co, St), \quad i = 1,...,n$$

$$\textbf{s.t.max. } (\Sigma Hi, \Sigma Ii, qu, ch), \quad i = 1,...,n$$

$$\textbf{min. } (\Sigma Li), \quad i = 1,...,n$$

Given that

$$U(Co,St) = f(Yn)$$

$$Yn = f(R)^{33}$$

where,

Co is the GP's consumption,

[33] For simplicity, it is assumed that the GP's only source of income is his remuneration from being a contractee of the NHS (i.e., Yn = R). However, it would be interesting and possible to drop this assumption.

St is the GP's status,

Yn is the GP's income,

R is the GP's remuneration.

In this model, the GP attempts to maximize the utility he derives from his patients (ΣPi), consumption (Co) and status (St) derived utility (G), whilst attempting to minimize his labour input (ΣLi). Such an approach is similar to Margolis (1982), who postulates that individuals have `split preference systems', in which one set of preferences relate to group interests and the other to selfish ones. It may be argued that the model specified here is analogous, since the sub-role of agent is concerned with group (patient) derived utility, whilst the sub-role of independent contractor is concerned with selfish (consumption and status) derived utility[34]. However, Margolis argues that split preferences are not necessarily inconsistent with individual utility maximisation, since individuals with split preference systems also derive utility from participating in activities that aid the group, as well as from the usual selfish source: consumption. Therefore, the model specified here allows a GP to be rational (i.e., utility maximising) and self-interested, whilst being concerned for patient welfare (which the role of GP demands)[35].

[34]Margolis argues that if utility functions, like the ones specified here, are used to present his model, the analysis becomes immersed in problems. However, utility functions specified here are not meant to be incorporated fully into Margolis' analysis.

[35]This is possible because the GP is a utility maximiser (and not a profit maximisers), with patient utility entering his split preference system.

5.ENTREPRENEURSHIP WITHIN GENERAL PRACTICE

The sub-role of GP fundholder

The introduction of the PBS created a third main general practice sub-role: that of fundholder. The PBS made it possible for GPs, who wish to do so, to apply to have their sub-role of *independent contractor* - Department of Health altered to that of:

fundholding independent contractor **- Department of Health.**

This sub-role binds fundholding GPs to a status different in terms of management structure, system of funding and property rights, from the status that non-fundholding GPs are subject to. This status gives GPs the freedom to hold and co-ordinate their own practice budgets, and to decide what constitutes the optimal spending mix for their practice, as well as making it possible for GPs to decide to become `fundholding entrepreneurs' (FE).

The GP's objective function may now be altered to accommodate the sub-role of fundholder:

$$\text{Max } FE = U(\Sigma Pi, Co, St), \quad i = 1,...,n$$

$$\text{s.t.max. } (\Sigma Hi, \Sigma Ii, qu, ch), \quad i = 1,...,n$$

$$\text{min. } (\Sigma Li, S), \quad i = 1,...,n$$

$$(B) \geq (S)$$

Given that,

$$U(Co,St) = f(Yn)$$

$$Yn = f(R)$$

$$S = f(\Sigma Ii, Q)$$

where,

FE is the fundholding entrepreneur's utility

S is spending in the hospital, practice and prescribing elements of the practice budget,

B is the practice budget.

In the altered objective function, it is assumed that the FE derives utility from the same sources as non-fundholders, and that the PBS imposes the additional constraints of minimizing practice spending (S) and ensuring that practice spending does not exceed the cash-limited practice budget (B). Furthermore, it is also assumed that the amount of practice budget money the FE spends is a function of the quantity of health care inputs (ΣIi) he supplies and the standard of service (Q) he offers. Within this framework, the rational FE will attempt to minimize the amount of money his practice spends, as any surplus (i.e., $S < B$) he generates may be used to purchase additional health care inputs, or to enhance the standard of service the practice offers, which will increase his utility. Furthermore, as the FE is subject to more relaxed property rights and as the practice budget scheme allows him to purchase defined hospital services and diagnostic tests, the FE has a larger utility opportunity set than a non-fundholder. For example, in this model it is assumed that if a non-fundholder refers a patient to a consultant, he only derives utility from his involvement as agent; whilst an FE in the same situation not only derives utility from his involvement as an agent, but he may derive utility from the treatment the consultant gives, if the treatment is paid for out of his practice budget. Therefore, an FE may be able to derive more utility with given resources than a non-fundholder, since he is more efficient at converting resources into utility, and he also has a larger utility opportunity set from which to derive such utility.

A significant feature of this model is that the introduction of the cash-limited practice budget makes the FE concerned with efficiency (i.e., maximising his desired objective(s) and utility, with a cash-limited practice budget). This is in contrast to non-fundholding GPs who are modelled neither as being subject to the practice budget constraint (B) nor spending minimisation (S), which seems intuitive as their spending is not cash-limited. Therefore, in accordance with the essence of Casson's definition, only GPs who hold their own practice budgets are entrepreneurs, since only they are concerned with efficiency.

Efficiency within general practice

Efficiency within the NHS may only be defined in relation to the underlying objectives of the system (Posnett, 1993, p.2). Within the context of general practice, it may be argued that the primary objective is to meet the requirements of good general practice; which the GPWP defined in terms of responsibility, availability, health promotion, qualifications, information and choice. As the requirements of good general practice are a bench-mark in relation to which the standard of service a GP offers may be judged, it may be argued that in this context efficiency means maximising standard of service, at least cost. Furthermore, as FEs are concerned with the management of a practice budget, it may be argued that the concept of cost relevant in this context is `financial cost' (i.e., practice spending). However, this cost-minimization approach neither recognises the outcomes an FE achieves, nor the opportunity cost of his actions. Indeed, it may be argued that the demand for GP services is only derived from the outcomes they are expected to achieve, and that the outcome relevant in this context is `health' status. A concern with `health' status outcomes brings into play the notion of efficiency as maximising `health' gain, at least cost, which Culyer (1991a, pp.1253-4) refines into three[36] kinds, important in this context:

(1) providing only services that are *effective* in the sense that there is believable evidence that patients will enjoy *better health* with the interventions than without them,

(2) providing whatever effective services are provided at *least resource cost*,

(3) *concentrating resources* on those effective services, provided at least cost, that offer the *biggest pay-off* in terms of health. (*italics added*).

[36]Culyer outlines a fourth kind of efficiency concerned with the `socially optimal' level of funding for a health care system, but it is not relevant in this context, since concern is with efficiency within a given budget, not changing that budget to its efficient level.

Therefore, if it is assumed that an FE is concerned with the `health' status outcomes of his actions, then Culyer's refinements may be used to underpin the judgemental decisions that an FE has to take about the optimal way to co-ordinate his cash-limited practice budget. To be efficient under definition (1), an FE must examine the effectiveness, in terms of `health' status gain, of every service he purchases or provides. Once the effectiveness of a service has been established, to fulfil definition (2) an FE must only buy services from providers that are technically efficient[37], or ensure that the services he provides are provided at least resource cost.

To fulfil definition (3), not only must services be effective, in terms of `health' status gain, and technically efficient, but there must be allocative efficiency[38], in the sense that resources are allocated with the intention of maximising the resulting improvement in `health' status. This third refinement of efficiency embodies what is termed `cost-effectiveness'[39], where the concept of cost employed is not a financial one, but the economists' standard notion: cost is the benefit that could have been obtained had the resources in question been applied in the most beneficial alternative way (Culyer, 1990, p.4-5). Therefore, refinement (3) demands that a fundholder evaluates the `opportunity cost'[40] of his spending.

In this framework, if an FE is subject to more than one objective, he must weight each in accordance with the importance he wishes to give it. Such weighting is necessary as FEs are subject to cash-limited practice budgets, which produces a trade-off problem. Indeed, an FE must co-ordinate his practice budget in a

[37]i.e., whatever mix of health care services is to be produced should be produced at least resource cost (Posnett, 1993, p.3).

[38] i.e., the allocation of health expenditure between alternative health care procedures or services should be that allocation which will generate the maximum impact on health status (Posnett, 1993, p.2).

[39]i.e., not incurring a higher cost than is necessary to achieve an end (Culyer, 1990, p.4).

[40]i.e., the cost of using resources in one activity is the value forgone by not using them in the best alternative activity (Friedman, 1984, p.260).

manner that trades-off the desired objective of maximizing `health' status gain with the obligation of meeting the requirements of good general practice and the desire to maximize the standard of service offered. However, it may be argued that the changes to their system of remuneration give GPs an incentive to provide the services defined and meet the targets specified in the GPWP, whilst they have no incentive to maximise `health' status gain. It is possible that this could lead to a situation in which GPs reduce their spending on services effective in terms of `health' status gain (for which they are not directly remunerated) in order to spend the freed money on services for which they are paid on a cost-per-item service basis for providing, but which may realize smaller `health' status gains. Furthermore, the planned increase in the importance of capitation fees suggests that GPs will have less incentive to provide services that do not have a related payment, unless they feel the services will attract patients to their lists: a factor which may also reduce the `health' status gain of a GP's actions.

In sum, it is not clear what objective, or weighting of objectives, GPs, whether fundholding or not, will plan to achieve in the reformed NHS. In line with the essence of Casson's argument, it may be argued, however, that an FE will be more successful at achieving his desired objectives, than a non-fundholder, since the former is an entrepreneur, whilst the latter is not. However, this may result in a paradoxical situation, in which the non-fundholder may realize greater `health' status gains, as he is less able to meet the requirements of the GPWP.

The fundholding entrepreneur

In the model developed earlier, it was assumed that a rational FE attempts to co-ordinate his practice budget spending in a manner that maximises his utility, which suggests that he may co-ordinate his practice budget so that it simultaneously maximises the utility he derives from the sub-roles of agent and independent contractor. Furthermore, if it is assumed that an FE is not purely self-interested (which the

above model does) and that he has an (unconscious) desire to do his fair-share in respect to maintaining and improving the welfare of his patients, this suggests that an FE will weight each of the sub-roles in a manner that ensures that his preferences for acting in patient-, as well as in self-, interest are met. Such an argument is similar to Margolis (1982), whose `split preference system' model considers (Margolis, 1982, p.36):

> **what sort of allocation rule we might guess from our intuitive sense of what gives a human being the feeling of psychological equilibrium associated with the fair-share notion.**

Margolis' model attempts to explain how rational individuals, with a selfish concern for themselves, as well as a concern for the group to which they belong, allocate their resources in a manner that maximises their utility. Margolis' description of his model may be altered slightly to suit the current purpose, and explained as follows. Firstly, *a* is taken to be the total amount of his practice budget that an FE allocates to the sub-role of agent, as a means of maximising his agent derived utility (A-utility); and *ic* is taken to be the total amount of his practice budget an FE allocates to the sub-role of independent contractor, as a means of maximising his independent contractor derived utility (IC-utility). Then, the ratio, *a*/*ic*, is taken to be what Margolis calls the `participation ratio', which gives the ratio in which an FE allocates his practice budget between spending intended to maximise A-utility and IC-utility. Therefore, in the current interpretation of Margolis' model, it is assumed that an FE spends all of his practice budget and does so in a manner that attempts to maximises his total utility, by maximising the utility he derives from each of the sub-roles. Adopting the above notation, Margolis' model may be explained using Figure 5.1 (overleaf).

PRACTICE SPENDING EQUILIBRIUM FOR THE FUNDHOLDING ENTREPRENEUR

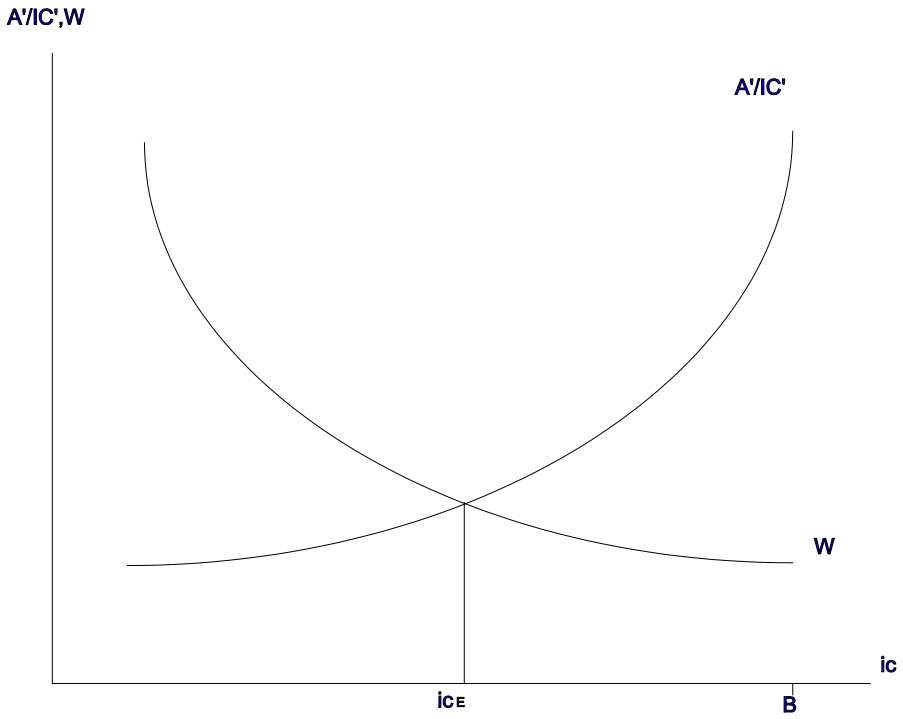

FIGURE 5.1. Adapted from:(Mooney, 1992, p.129)

In Figure 5.1, the line sloping upwards to the right is what Margolis terms the `value ratio', A'/IC', which is the ratio of marginal A-utility (A') to marginal IC-utility (IC'). This line shows the marginal rate of substitution between A-utility and IC-utility; and, in accordance with the assumptions made by Margolis (1982, p.37), it assumes that an FE only has a microscopic effect upon the welfare of his patients and that he experiences diminishing marginal utility in the sub-role of independent contractor. The first assumption seems robust in the current context, as it was assumed earlier that a GP's inputs is only one of many inputs into his patients' health production functions (see footnote 30); whilst the second assumption that an FE experiences diminishing marginal utility, as their remuneration rises, seems acceptable in the current context and in terms of model building within economics as a whole.

Therefore, in this interpretation of Margolis' model, marginal A-utility, A', is unaffected by the practice budget spending allocated between the two sub-roles, and as an FE spends more of his practice budget on the sub-role of independent contractor (i.e., moves closer to B on the horizontal axis in Figure 5.1, which shows practice budget spending on the sub-role of independent contractor) the value ratio, A'/IC', rises. Furthermore, the shape of the line A'/IC' suggests that an FE has a preference for expenditure smoothing, in which he prefers to spend some of his practice budget on each sub-role, rather than spending it all on one sub-role or the other.

The line sloping downwards to the right is the weighting function, W, which is the weight that the `referee inside'[41] an FE gives to IC-utility in choosing whether to allocate a marginal practice budget pound to the sub-role of agent or the sub-role of independent contractor. The weighting function, W, varies positively with the participation ratio, *a/ic*, as Margolis assumes that the likelihood that an FE allocates a marginal practice budget pound to the sub-role of independent contractor increases with increases in the participation ratio, A'/IC'. This is because the less an FE spends on selfish ends the more he will wish to do so in order to smooth his expenditure between the two sub-roles, and *vice versa*. Consequently, as an FE devotes more to the sub-role of independent contractor (and less to the sub-role of agent), the weighting function, W, falls.

In Figure 5.1, an FE is in equilibrium when the weighting function, W, intersects the value ratio, A'/IC', which occurs at IC_E, where the FE allocates IC_E of his practice budget (B) to the sub-role of independent contractor and B - IC_E to the sub-role of agent. Therefore, according to this interpretation of Margolis' model, an FE is in equilibrium when the weighting he gives to each of the sub-roles coincides with his marginal rate of substitution: a situation in which the propensity to favour the sub-role of independent contractor balances the propensity to favour the sub-role of agent. Therefore, in this context, Margolis'

[41] Margolis is not postulating a rule consciously followed, but rather an internal mechanism of which he may be quite unconscious (Margolis, 1982, p.39).

model suggests that an FE will co-ordinate his practice budget in a manner that maximises the utility he derives from each of the sub-roles, given his propensity to favour each. However, whilst Margolis model illustrates that FEs may co-ordinate their practice spending in a manner that maximises the utility they derive from each sub-role, where such an equilibrium will occur depends upon the weighting an FE gives to each of the sub-roles. Therefore, in this context, Margolis' model suggests that two types of FE may theoretically exist, who each give different weights to each of the sub-roles: the patient-interested and the self-interested FE.

In sum, Casson's definition of an entrepreneur suggests that an FE will be more efficient at generating utility in the sub-roles of agent and independent contractor, because he spends his practice budget on the activities and patients that generate the most utility, and, within this allocation, co-ordinates his spending, purchasing and provision in a manner that is efficient in the senses discussed in the previous section (with the notion of efficiency deemed relevant depending upon the objectives of an FE, and how he weights them). For example, in the sub-role of agent, an FE may generate more `health' status gain, administer more health care inputs and offer a better standard of service, than a non-fundholder, which means that he will realize more A-utility; or, in the sub-role of independent contractor, an FE may provide more of the remuneration-linked services, be more successful at achieving the remuneration-linked targets and attract more patients to his list, than a non-fundholder, which will increase his remuneration and so enhance his IC-utility.

Finally, by combining Casson's analysis with Margolis' model, it is suggested that an FE will co-ordinate his practice budget in a manner that maximises the utility he derives from the sub-roles of agent and independent contractor. However, the effect that this will have upon patient utility is contingent, and depends upon how an FE derives his utility, as well as upon how he weights the sub-roles of agent and independent contractor; which, in turn, depends upon whether the fundholder is a patient-interested or self-interested FE.

DISCUSSION

This dissertation was an attempt to apply Casson's theory of the entrepreneur to the behaviour of GPs within the NHS. It posited the idea that GP fundholders are entrepreneurs, since they specialise in taking judgemental decisions about the co-ordination of their cash-limited practice budgets. The application of this approach generated some interesting preliminary insights, mainly in two areas.

The first area that generated preliminary insights was the area concerned with the specification of patient, GP and FE utility and objective functions. In the objective functions specified, Casson's assumptions of profit maximisation and utility derived solely from consumption and status were relaxed, and it was assumed that both GPs and FEs derive utility in the sub-role of agent, as well as from Casson's sources. The second area that generated preliminary insights was the application of Margolis' split preference system to the actions of FEs, who were assumed to co-ordinate their practice budgets in a manner that maximising the utility they derive from the sub-roles of agent and independent contractor. In sum, although some preliminary insights were generated in these two areas, the analysis used and objective functions specified need refinement, if the current approach is to be deemed robust.

Finally, it may be argued that the aim of generating preliminary insights and establishing a *prima facia* case as whether it would be worthwhile pursuing such a line of enquiry more determinedly or not was achieved. Indeed, the supervisors of this dissertation, at the University of Nottingham, plan to use the preliminary insights generated to underpin further (questionnaire-based) research.

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